Oct 51

K. S. TOPCHIYEV

USSR/Chemistry - Antimalarials
Guardiine Derivatives

"Chemical Structure and Parasitocidal Activity. SL. Derivatives of Dipiperidylguanidine, "M. B. Braude, K. S. Topchiyev, Chem Dept, Inst of Malaria and Med Parasitol, Moscow

"Zhur Obshch Khim" Vol XXI, No 10, pp 1909-1914

On basis of 15-yr-old synthesis by Topchiyev of certain dipiperidylguanidines having strong localanasthetic action, synthesized 5 new dialkylamino alkyl-substituted sym dipiperidylguanidines, of which 2 had Cl-substituted piperidine ring. Three of these derivs were stated to be inactive against bird malaria. Method was interaction of sym dipiperidylthioureas with aliphatic amines in presence of desulfurizing agent.

PA 194Th0

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

LEBEDEVA, T.G.; TOPCHIYEV, Sh.R. (Yalta)

Candidomycosis following antibiotic treatment of tuberculosis. Vrach. delo no.8:110 Ag 160. (MIRA 13:9)

1. Tuberkuleznyy sektor Instituta klimatologii i klimatoterapii im. Sechenova.

(MONILIASIS) (ANTIBIOTICS) (PNEUMONIA)

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s/020/60/135/005/002/043 C111/C222

AUTHORS: Vasil'yeva, A.B., and Tapchiyev, V.A.

TITLE: Asymptotic Formulas for the Solution of a Boundary Value Problem in the Case of Second Order Equation Containing a Small Parameter With the Highest Derivative

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol.135, No.5, pp.1035-1037

TEXT: The authors consider the boundary value problem

- $(3) \qquad M^2 y'' = F(y,t),$
- (1) y(0) = 0, y(1) = 0.
- Let (6)

 $y = \bar{y}_0(t) + \mu \bar{y}_1(t) + \mu^2 \bar{y}_2(t) + \cdots$

be the formal development of the solution. By the transformations $\mathcal{T}_0 = \frac{t}{M}$ and $\mathcal{T}_1 = \frac{t-1}{M}$ let (3) be transformed in

(7)
$$\frac{d^2 y}{d \tau_o^2} = F(y, \tau_o \mu)$$

and Card 1/4

s/020/60/135/005/002/043 C111/C222

Asymptotic Formulas for the Solution of a Boundary Value Problem in the Case of Second Order Equation Containing a Small Parameter With the Highest Derivatives

(8)
$$\frac{\mathrm{d}^2 \mathbf{y}}{\mathrm{d} \mathbf{z}_1^2} = \mathbf{F}(\mathbf{y}, 1 + \mathbf{z}_1 \mathbf{w}).$$

Let

(9)
$$y = y_0 + \mu y_1 + \cdots$$

(o) (o) (o)
(g)
$$y = y_0 + / - y_1 + \cdots$$

and (1) (1) (1)
(10) $y = y_0 + / - y_1 + \cdots$

be the formal solutions of (7) and (8). Let

Card 2/4

s/020/60/135/005/002/043 c111/c222

Asymptotic Formulas for the Solution of a Boundary Value Problem in the Case of Second Order Equation Containing a Small Parameter With the Highest Derivative

and

and
(18)
$$U_n = \bar{y}_0(t) + \mu^2 \bar{y}_2(t) + \dots + \mu^{2n} \bar{y}_{2n}(t)$$
.

Let $\varphi(t)$ be a solution of F(y,t) = 0. Let φ be a sufficiently small neighborhood (independent of φ) of the curve consisting of $y = \varphi(t)$ Card 3/4

5/020/60/135/005/002/043 0111/0222

Asymptotic Formulas for the Solution of a Boundary Value Problem in the Case of Second Order Equation Containing a Small Parameter With the Highest Derivative

 $(0 \le t \le 1)$, t=1 (from y = 0 to y = $\psi(0)$) and t = 1 (from y = 0 to y = $\psi(1)$). Theorem: If F(y,t) has continuous partial derivatives up to the order n+1 inclusively in α , and if $F_v > m > 0$ in α and has there continuous partial

derivatives up to the order 2n inclusively, then for the solution $y(t, \omega)$ of the boundary value problem (3)+(1) there hold the inequations

$$|y(t,\mu)-Y_n| < c\mu^{n+1}$$
 (0 \left \left 1)
 $|y(t,\mu)-U_n| < c\mu^{2(n+1)}$ (\left \left \left \left 1-\ell),

where Y_n and \overline{U}_n are given by (15) and (18); $\boldsymbol{\mathcal{E}}$ is arbitrarily small, in-

dependent of m; C is a constant independent of m for m < m.
There are 2 Soviet references.

ASSOCIATIION: Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova

(Moscow State University imeni M.V.Lomonosov)
July 1, 1960, by I.G.Petrovskiy, Academician
June 30, 1960 PRESENTED:

SUBMITTED:

Card 4/4

TOPCHIYEVA, I.N.; LEVINA, R. Ya.

Racemization ability of optically active trans-cyclopropanedicarboxylic acid in interphase polycondensation. Vysokom. soed. 8 no. 1:3-7 Ja *66 (MTRA 19:1)

1. Moskovskiy gosudarstvonnyy universitet imeni Lomonosova. Submitted January 27, 1965.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

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YESIPOVA, N.O., TOPOHIYEVA, I.N.

Structure of optically active polyamides based on transcyclopropanedicarboxylic acid and (-propylenediamine, Vysokom, seed, 8 no. 1:176-181 Ja *66 (NIRA 19:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova. Submitted March 9, 1965.

TOPCHIYEVA, I.N.; LEVINA, R.Ya.; KABANOV, V.A.; KARGIN, V.A.,

Storeospecific effects in interfacial polycondensation. Dokl. AN SSSR 156 no.4:929-931 Je '64. (MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.

36288 s/190/62/004/004/004/019 B119/B138

5,500 1[.8600 AUTHORS:

Shchetinin, A. A., Topchiyeva, I. N., Shabarov, Yu. S.,

Levina, R. Ya.

TITLE:

Cyclopropanes and cyclobutanes. XXIII. Polymerization of aryl cyclopropanes at high pressures and temperatures

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 4, 1962, 499-502

TEXT: The effect of high pressures (500-7500 atm) on phenyl-, p-aminophenyl-, p-dimethyl aminophenyl-, p-chlorophenyl, p-hydroxyphenyl-, p-methoxyphenyl cyclopropane, and p-methoxyphenyl cyclobutane between

100 and 200°C was investigated. Of these only p-hydroxy- and p-methoxyphenyl cyclopropane undergo polymerization. The latter gives a

viscous oil at 500 atm and 200°C, a solid polymer at 7500 atm and 200°C. With hydroquinone as inhibitor only a viscous liquid is formed at 7500 atm. Therefore, polymerization takes place by the free-radical mechanism. Only cyclopropane rings participate in the polymerization. The end product of the thermal decomposition and the subsequent oxidation of the Card 1/2

0

Cyclopropane and cyclobutanes. ...

S/190/62/004/004/004/019 B119/B138

polymer is anisic acid. There is 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova

(Moscow State University imeni M. V. Lomonosov)

SUBMITTED:

March 6, 1961

Card 2/2

TOPCHIYEVA, K.P. Analysis of the conditioned reflex arc to the heart. Fiziol.zhur. (Ukr.) 1 no.1;33-39 Ja-F'55. (MIRA 9:9) 1. Vinnits'kiy medichniy institut, Kafedra normal'noi diziologii. (CONDITIONED RESPONSE) (HEART--INNERVATION)

BR

ACCESSION NR: APLO30371

8/0190/64/006/003/0512/0515

AUTHORS: Topchiyeva, I. W.; Zlobin, V. K.; Potapov, V. M.; Levina, R. Ya.; Kabanov, V. A.; Kargin, V. A.

TITLE: Synthesis of optically active polymers on the basis of propylenediamine and cyclopropanedicarboxylic acid

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 3, 1964, 512-515

TOPIC TAGS: polymer, optically active polymer, polymide, cyclopropanedicarboxylic acid, propylene-1,2-dismine, interfacial polycondensation, dichloride of cyclopropanedicarboxylic acid, turbidimetric titration

ABSTRACT: Synthesis of an optically active polymer from racemic components where the rate of incorporation of the D or L forms into the macromolecule differed was investigated. To 0.35 gm of racemic propylenediamine (in 400 ml water containing 0.8 gm KOH, at room temperature and under energetic stirring) were added dropwise 0.75 gm of the dichloride of trans-cyclopropanedicarbonic-1,2 acid in 90 ml of chloroform. After standing 30 minutes the polyamide was separated by filtration, washed with 10% HCl and water, and purified by dissolution in 85% formic acid and Cord 1/2

ACCESSION NR: AP4030371

subsequent precipitation with ammonia. The synthesis of a polyamide from L-propylenediamine was conducted in a similar way. From this polyamide the cyclopropanedicarbonic acid component was recovered by hydrolysis with phosphoric acid, treatment with barium hydroxide, and passage through a column containing the cationic resin KU-2. The recovered acid was found to be optically inert, while the polyamide itself displayed an optical rotation of a sign opposite to that of the original L-propylenediamine (its optical rotation dispersion curve being normal). It was also observed that the melting point of the optically active polymer was 40 to 50 degrees higher than that of the racemic polyamide. Orig. art. has: 1 formula and 3 charts.

ASSOCIATION: Moscovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 26Mar63

DATE ACQ: 07May64

ENCL: 00

SUB CODE: CH

NO REF 80V: 002

OTHER: 007

Card 2/2

SHCHETININ, A.A.; TOPCHIYEVA, I.N.; SHABAROV, Yu.S.; LEVINA, R.Ya.

Cyclopropanes and cyclobutanes. Part 23: Polymerization of arylcyclopropanes under the effect of high pressure and temperature. Vysokom.soed. 4 no.4:499-502 Ap '62. (MIRA 15:5)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova. (Cyclopropane) (Polymerization)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

TOPCHIYEVA, I.N.; ZLOBIN, V.K.; POTAPOV, V.M.; LEVINA, R.Ya.; KABANOV, V.A.; KARGIN, V.A.

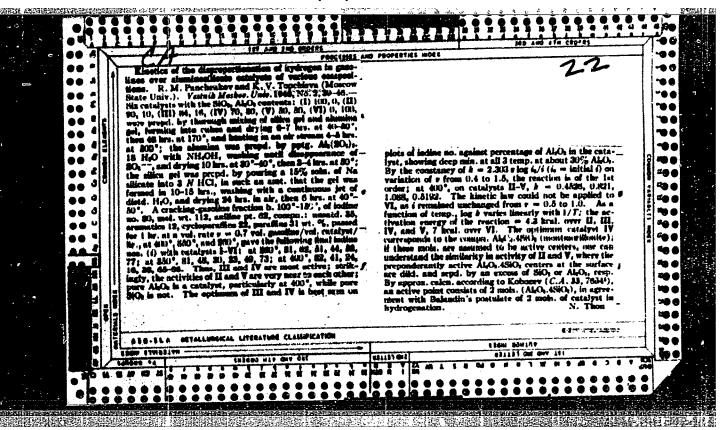
Synthesis of optically active polymers based on propylenediamine and cyclopropanedicarboxylic acid. Vysokom. soed 6 no.3: 512-515 Mr'64. (MIRA 17:5)

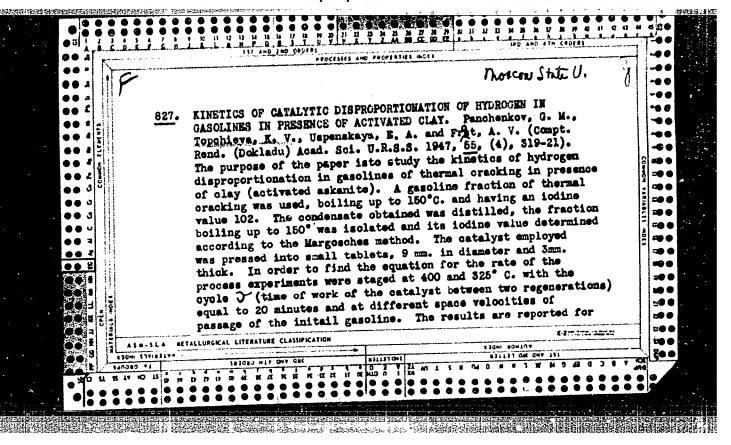
1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

Trans-cis isomerization of 1,2,eyelopropanedicarboxy:in acid.

Zhur. ob. khim. 35 no.4:749 hp 165.

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.





TOPCHIEVA, K. V.

. PA ST 37

USSR/Gasoline - Production Catalysts, Fuel Feb 1947

"An Investigation of the Kinetics of the Disproportionate of Hydrogen in Casolines as Factors of the Composition of Aluminum Silicate Catalysts," K. V. Topchieva, G. M. Panchenkov, 4 pp

"CR Acad Sc1" Vol LV, No 6 -pp-101-508

Study of the decrease in the content of unsaturated hydrocarbons due to the redistribution of hydrogen in a mixture of hydrocarbons in the presence of sulphuric acid, a phenomenon also occurring in the presence of synthetic aluminum silicates.

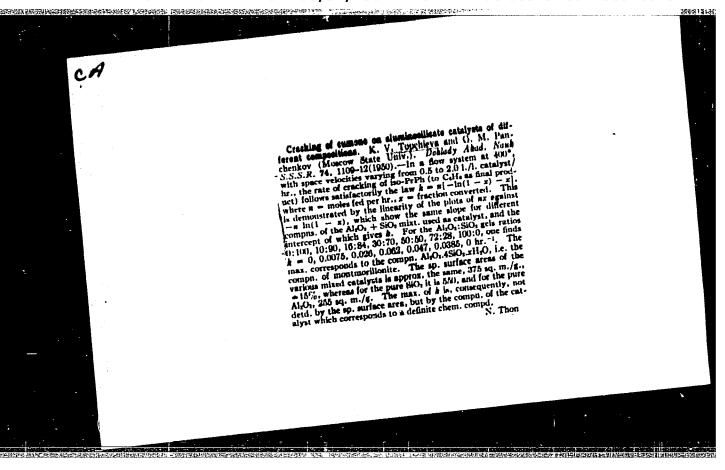
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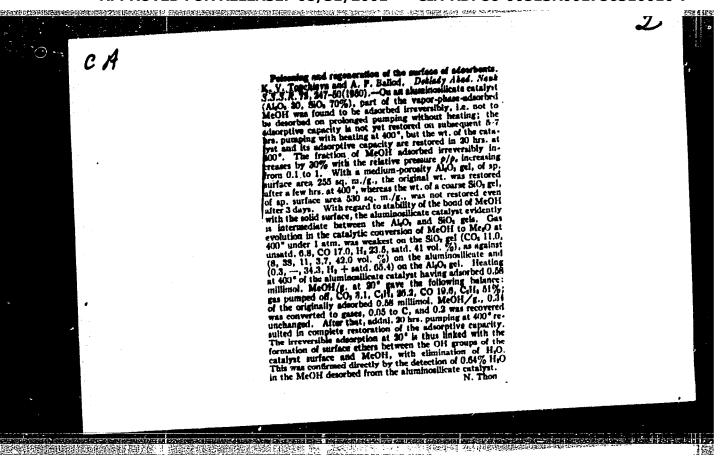
TOPCHTYEVA, K. V. - Winetic cracking of cureme over aluminosilicate catalysts,"

Topchiyeva, K. V. - Winetic cracking of cureme over aluminosilicate catalysts,"

Vestnik M,sk. un-ta, 1948, No. 11, P. 133-36

So: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)





S/081/60/000/017/005/016 A006/A001

The Effect of the Chemical Composition, pH of the Synthesis Medium and the Nature of Initial Sols on the Activity of Alumo-Silicate Catalysts

processing with water vapor. After processing with H₂O vapor, the activity of all paralysts drops but their specific activity increases. The specific activity of paralysts of series I is higher than that of catalysts of series II. It is concluded that at a corresponding chemical composition of the initial solutions, pff of the formation medium plays a decisive part in the formation of active contacts.

V. Vasserberg

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

YEREMIN, Ye.N., prof.; KISELEV, A.V., prof.; KOBOZEV, N.I., prof.;
PANCHENKOV, G.M., prof.; POLTORAK, O.M., prof.; SKURATOV, S.M., prof.;
TATEVSKIY, V.M., prof.; TOPCHIYEVA, K.V., prof.; FIGUROVSKIY, N.A.,
prof.; FILIPPOV, Yu.V., prof.; SHAKHPARONOV, M.I., prof.

IAkov Ivanovich Gerasimov; on his sixtieth birthday. Zhur. fiz. khim. 37 no.12:2803-2804 D '63. (MIRA 17:1)

l. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta.

S/121/60/000/018/002/009 A006/A001

THE PROPERTY OF THE PROPERTY O

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 9, p. 65, # 72595

AUTHORS: Guseynova, Z. A., Topchiyeva, K. V., Zul'fugarov, Z. G.

TITLE: The Effect of Activating Cations on the Poprosity of the Structure

and Activity of Metal-Silicate Catalysts

PERIODICAL: Azerb. khim. zh., 1959, No. 6, pp. 47-55 (Azerb., Russian summary)

TEXT: On the example of Mn-, Zn-, Cu-, and Sr-silicate catalysts it is shown that more active contacts with larger specific surfaces are obtained when the indicated cations of basic metal-silicate compounds are partially substituted by cations of activating Al salts. The introduction of a Mg activator cation into the composition of the catalyst causes a widening of the pore diameter. Then the activity changes only slightly. Benzines formed on the catalysts activated with an Al cation, are more aromatized and contain less non-saturated hydrocarbons than benzines formed on initial catalysts and on catalysts activated with Mg cations.

From the author's summary.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

TOPCHIYEVA, K.V.; ROSOLOVSKAYA, Ye.N.; SHARAYEV, O.K.

Effect of the degree of dehydration of aluminum oxide on its catalytic activity. Vest. Mosk.un. Ser.mat., mekh., astron., fiz., khim. 14 no.1:217-223 '59. (MIRA 13:8)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.
(Aluminum oxide)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

TOPCHIYEVA, K.V., ROMANOVSKIY, B.V.

Determination of adsorption coefficients by the kinetic method. Part 1: Adsorption coefficients of water, ether, and ethylene on aluminum oxide. Kin. i kat. 1 no.1:106-116 My-Je '60. (MIRA 13:8)

1. Moskovskiy gosudarstvennyy universitet, Kafedra fizicheskoy khimii.

(Adsoption) (Alumina)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

CIA-RDP86-00513R001756310010-7 "APPROVED FOR RELEASE: 08/31/2001

S/189/60/000/003/004/013XX B003/B067

AUTHORS:

Topchiyeva, K. V., Stepanova, G. N.

TITLE:

Esterification of Acetic Acid and Vinyl Ethyl Ether

Vapor Phase on Oxide Catalysts 1

PERIODICAL:

Vestnik Moskovskogo universiteta. Seriya 2, khimiya, 1960,

No. 3, pp. 3-6

The authors studied the interaction of acetic acid with unsaturated vinyl ethyl ether on industrial, aluminum oxide, synthetic alumosilicate (30% Al₂0₃, 70% SiO₂) and pure synthetic silicon oxide for determining general rules governing the esterification reaction at the catalysts mentioned. In the experiments they used vinyl ethyl ether with a boiling point at 36° C (749 mm Hg), a refractive index $n_D^{20}=1.3779$, and chemically pure, distilled glacial acetic acid 99.8%. The following

reactions took place: $CH_2 = CH - OC_2H_5 + CH_3COOH \longrightarrow CH_3 - CH < \frac{OC_2H_5}{OCOCH_3}$

Card 1/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

Esterification of Acetic Acid and Vinyl Ethyl S/189/60/000/003/004/013/XX Ether in the Vapor Phase on Oxide Catalysts without catalyst; Ref. 3) and CH_3 - CH_3 - CH_3 - CH_2 = CH - $OCOCH_3$ (in the vapor phase above the catalysts mentioned). Nitrogen and/or n-octane were used as inert diluents in the vapor phase to increase the yields in vinyl acetate (VA). Fig. 1 shows the temperature dependence of the VA yields above Al₂D₃ (flat rise up to 300°C, steeper rise to 350°C, followed by a plateau with 27% yield). Fig. 2 shows the same dependence on diluting acylal with n-octane 1:2 (linear rise of the yield in the temperature range from 350 to 400° C up to 47%). Fig. 3 shows the dependence of the VA yield on the contact time above Al203 at 400°C in n-octane medium (rectilinear steep rise up to $\sim4.5 \frac{1}{V} \frac{\text{ml hour}}{\text{ml}}$ followed by a plateau with a \sim 47% yield). Table 1 gives a comparative survey of the contact time, VA yield, and dilution with n-octane and/or nitrogen. The VA content in the reaction product was determined from the bromine number. The maximum VA yields (in a reaction without diluent) above Al₂O₃ were 27% (400°C), above alumosilicate 18.8% (350°C), above SiO₂ 15.7% (400°C). The Card 2/3

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Esterification of Acetic Acid and Vinyl Ethyl S/189/60/000/003/004/013/XX Ether in the Vapor Phase on Oxide Catalysts B003/B067

limitation of the yields is not due to the occurrence of a reaction equilibrium but to a partial resinification of the reaction product. There are 3 figures, 1 table, and 6 references: 3 Soviet, 1 German, 1 British, and 1 French.

ASSOCIATION: Moskovskiy universitet, Kafedra fizicheskoy khimii (Moscow University, Chair of Physical Chemistry)

SUBMITTED: July 15, 1959

Card 3/3

TOPCHIYEVA, K.V.; ROMANOVSKIY, B.V.; VEN'YAMINOV, S.A.

Evaluation of the activity of catalysts employed in cracking. Vest.
Mosk.un.Ser. 2: Khim. 15 no.1:3-10 '60. (MIRA 13:7)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.
(Catalysts) (Cumene) (Gracking process)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

TOPCHIYEVA, K.V.; STEPANOVA, G.N.

Vapor phase esterification of acetic acid and vinyl ethyl ether on oxide contacts. Vest. Mosk.un. Ser. 2: Khim. 15 no.3:3-6; My-Je '60. (MIRA 13 8)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.
(Acetic acid) (Ether)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

TOPCHIYEVA, K. V.	USER/Chemistry - Petroleum Catalysts Catalysts Catalysts Catalysts Catalysts Catalysts Catalysts Catalysts Catalysts Catalyst Catalysts Contd) Catalysts Contd) Mar/Apr 51 Mar/Apr 51

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17. 自然 MESS 经规模的 (Gallery Marshall Mar

Absolute rate constants of reactions of hydrocarbons on alaminaediticates of different compositions. R. V. Topchieva (Moscow State Univ.). Doblody Abad. Naile' S.S. S.R. 80, 635-8(1951); cl. C.A. 45, 1854]. 780].—Sp. surface areas of aluminosilicates of the compus. Alo: SO; — 0: 100, 10: 90, 10: 84, 30: 70, 50: 50, 72: 28, and 100: 0 were detd, both by the B.R.T. method of adsorption of MeOH, Calls, and McCiliPh, and by the "CC" method of expillary condensation of McOH and Calls; the B.R.T. detns, give the total surface area S of the catalyst skeleton, including the fine pores which are not included in the sp. surface S' fetd, by the CC method and corresponding to the adsorption film formed at the beginning of sorption hysteresis. The data for the above 7 compus. are: S (McOH) = 530, 480, 440, 500, 460, 420, 300 set. m./s.; (Calls) —, 370, ..., 430, ...; S' (McOH) = 340, 290, 200, 339, 300, 180, 90; (Calls) —, 200, 200, 370, 280, 230, Total pore vols. (cc./s.), by McOH, 0.84, 0.83, 0.92, 0.71, 0.81, 0.46, 0.31; by Calls, —, 0.83, 0.94, 0.69, 0.60, 0.54, —; by MccCHPh, —, 0.81,

—, 0.63, —, 0.40, —. The predommant pore radius, in A., s, by McOH, 37.5, 27, 32, 17-25, 22, 17-20, 20-27; by Calla, —, 32, 42, 17-25, 20-27, 22, —. These characteristics are compared with the catalytic activities in cracking of systemators, expressed by the cracking rate consta. h: racking of MegCHPh, 104 = 0, 7.5, 20, 72, 47, 33.5, 0; iccahydronaphthalene, 0, —, —, 3.1, —, 0; cetane, 0, —, 0.9, —, 9.1, 4.0, 0. It is obvious that the catalytic activity, which is max. for the compn. AlO:SiO₂ = 30:70, is detd, by the chem. compn. and stands in no relation to the sp. surface area or the predominant pore radius. Abstract consts., i.e. rate consts., per unit surface area S or S', are calcd. with the aid of the above detns. of S and S'. The data are: cracking of MegCHPb (per S by Calla), 104 = 0, 1.26, 5.27, 10.3, 4.94, 5.16, 0; (S by MegCHPh) 0, 1.05, —, 8.43, —, 3.77, 0; cracking of decahydronaphthalene (S' by MeOH) 0, —, —, 0.46, —, 0; cracking of cetane (S' by MeOH) 0, —, 1.3, —, 0.89, 0.4, 0. The max. abs. h thus corresponds to the compn. Al-O₂: SiO₂ = 30:70, i.e. to the compn. close to that of montmorillouite Al-O₂.

TOPCHITEVA, K.V.; IUNG-P'ING, K.

Effect of aluminosilicate catalysts on the dehydration mechanism of ethyl alcohol. Vest. Mosk.un. 7 no. 12: 39-48 D '52. (MLRA 7:9)

1. Kafedra fizicheskoy khimii. (Ethyl alcohol) (Dehydration (Chemistry)) (Catalysts)

BATTALOVA, SH., PANCHENKO, G. M. TOPCHIYEVA, K. V.

Cracking Process

Kinetics of cracking cetane with various alumino-silicate catalysts. Zhur.fiz.khim., 16, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

TOICHIEVA, K. V.

USSR/Chemistry - Hydrocarbons, Cracking Process, Catalysts

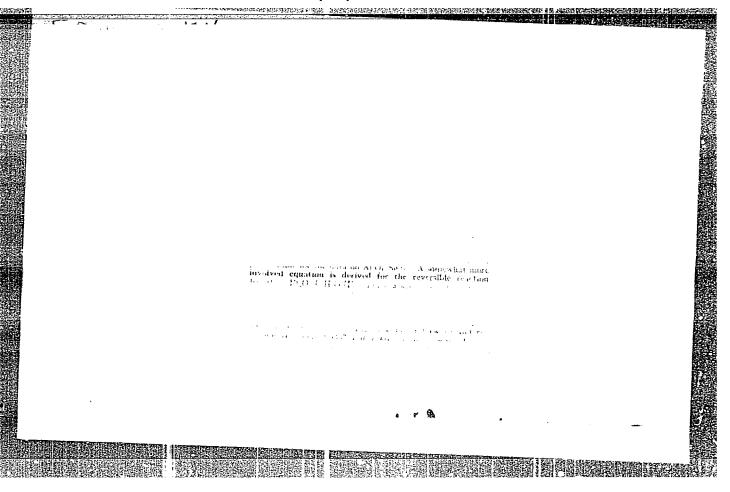
Jun 52

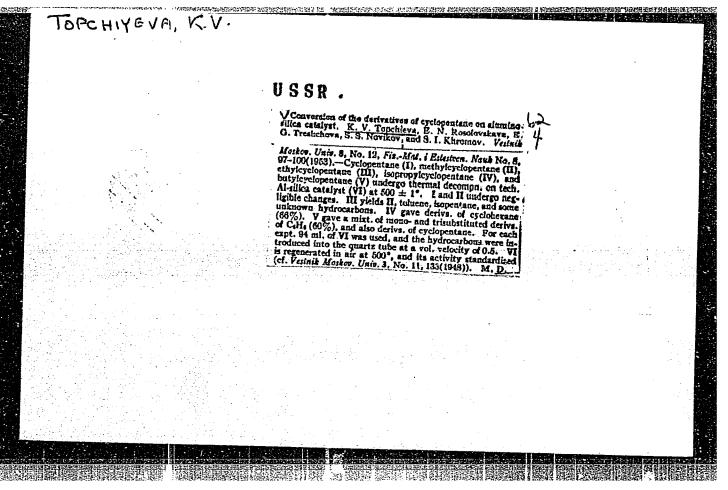
"Kinetics of the Cracking of Cetane on Aluminosilicate Catalysts of Various Composition," Sh. Battalova, G. M. Panchenkov, K. V. Topchieva, Moscow State U imeni M. V. Lomonosov

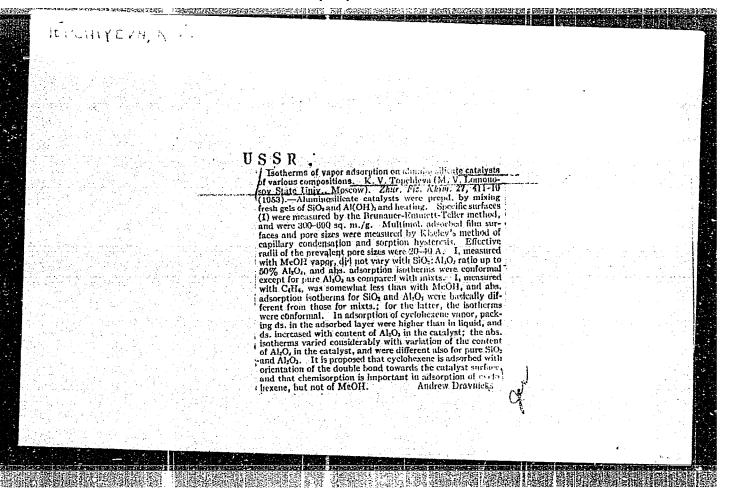
"Zhur Fiz Khim" Vol XXVI, No 6, pp 903-909

The catalysts investigated had an identical magnitude of the surface accessible to cetane mols. Catalysts of the compn 30% Al203, 70% SiO2 and Al203, 50% SiO2, which are the most acidic, were found to be more effective than the others. The energy of activation and the compn of the light fraction of the catalyzate do not depend on the catalyst's compn, which proves that the active centers are of the same type. The results in question confirm the original assumption by the authors that the catalytic activity of aluminosilicates is due to the chem properties of acidic hydroaluminosilicates.

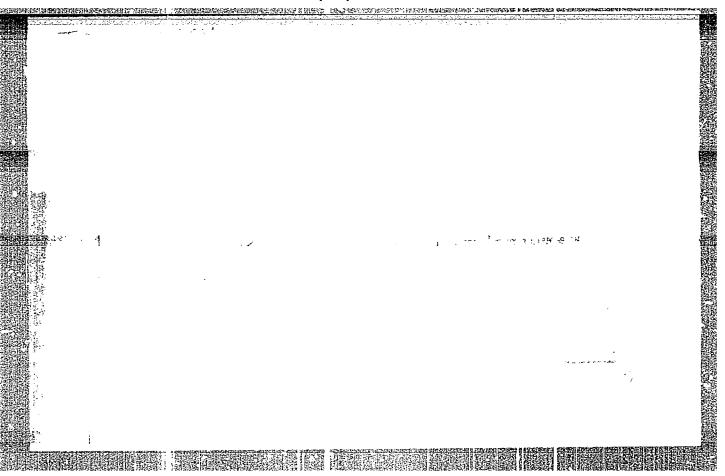
PA 220T34







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V,SR 4	Structural changes in speaking license catalysis coused by periodic regenerations. E. V. Topchisem. Celebray Za-Liski Mashas, Casadar I. Univ. im. M.V. Lemangesca, No. 164, 6-12(1953).—Adsorption was measured for freshly prept, aluminosillentes (Al-O ₂ /SiO ₂ : 10/80, 30/70, 60/60) and compared with those of used entalyst that had reached a coast, activity. Both catalysts were repeatedly regenerated by heating in a stream of day air at 599 for 4 hrs. The total vol. of pores and the vol. of the macropores increased more in the used entalyst. This process was accompanied by a slight decrease in the specific surface area and in the vol. of macropores was greatest in the entalysts entity from 0% to 10% Al ₂ O ₃ , and was least for the catalyst entity from 0% to 10% Al ₂ O ₃ , and was least for the catalyst with 30% Al ₂ O ₃ .	2 pt



TOPCHIYEVA, K.V. USSR/Chemistry Catalysis : 1/1 Card Topchieva, K. V., Ballod, A. P., Patsevich, I. V., and Rtishcheva, I. Authors : Conversion of cyclohexane over aluminum silicate catalysts with various Title Al203 and SiO2 content in conditions eliminating cracking. Selective poisoning with Na ions. : Izv. AN ESSR, Otd. Khim. Nauk., 3, 478 - 483, May - June 1954 Periodical : Preliminary results obtained in the study of the catalytic effect of Abstract aluminum silicates on skeletal isomerization and polymerization of hydrocarbons, are presented. The kinetics of three simultaneous reactions polymerization, hydrogen redistribution and isomerization - was investigated in conditions eliminating cracking. It is shown that cyclohexene conversion occurs on active centers of two types. The process of hydrogen redistribution and cyclohexene isomerization are described. The poisoning of the aluminum silicate for H-redistribution and isomerization is explained by the adsorption of Na-ions on the surface of the catalyst. Eighteen references: 17 USSR, 1 USA. Tables, graphs. Acad. of Sc. USSR, Petroleum Institute and the H. V. Lomonosov State Univ., Institution Moscow June 22, 1953 Submitted

TOPCHIYEV, K.V. USSR/Chemistry - Reaction Kinetics

FD-1208

Card 1/1

Pub. 129-11/20

Author

: Topchiyev, K. V.

Title

Allowand and the second second : A. V. Frost's work on catalysis and conversion kinetics of hydrocar-

Periodical

: Vest. Mosk. an., Ser. fizikomat. i yest. nauk, 9, No 5, 107-115,

Aug 1954

Abstract

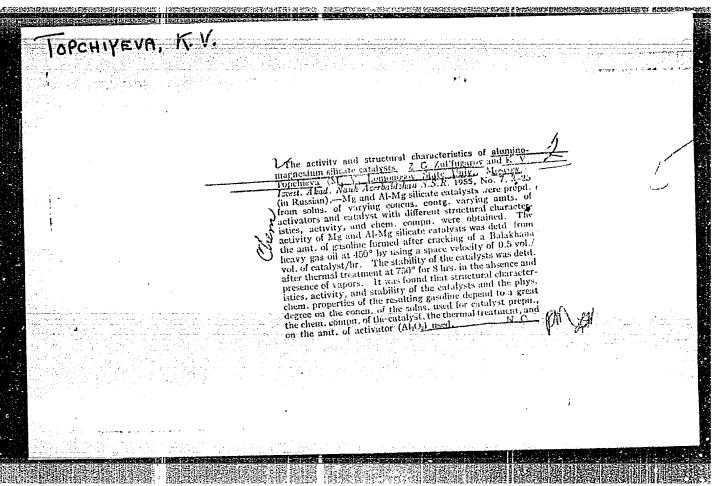
: Brief sketch outlining the highlights of A. V. Frost's work in the

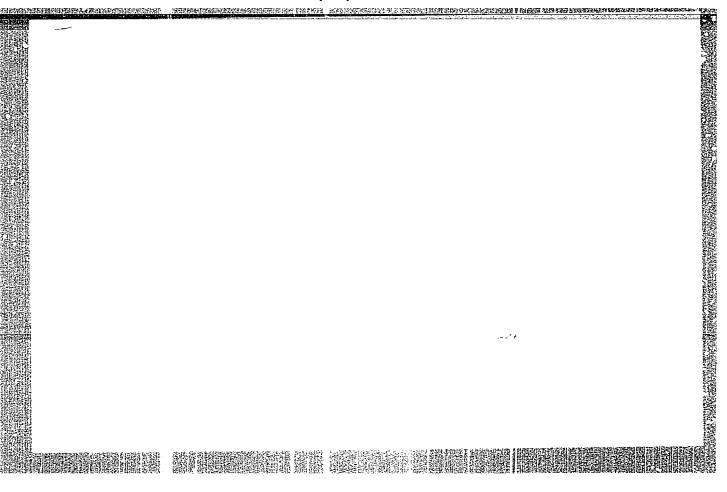
field of catalysis and conversion kinetics of hydrocarbons. No

reference.

Institution : Chair of Physical Chemistry

Submitted : April 28, 1953





TOPCHIYEVA, K.V.

USSR/Chemistry - Physical chemistry

Card 1/2 Pub. 147 - 13/21

Authors

* Topchiyeva, K. V., and Yun-Pin, K.

Title

The kinetics of ethyl alcohol and diethyl ether dehydration over aluminum and aluminum silicate catalysts. Part 2.

Periodical :

Zhur. fiz. khim. 29/10, 1854-1965, Oct 1955

Abstract

Equations are presented which describe the kinetics of ethyl alcohol dehydration over aluminum oxide and aluminum silicate catalysts in stages. It is shown that the kinetics of the first stage of alcohol dehydrogenation into ether is determined by an equation of a bimolecular reversible heterogeneous reaction in a flow when one of the reaction products is being

Institution:

Moscow State University im. M. V. Lomonosov

Submitted:

March 4, 1955

Card 2/2 Pub. 147 - 13/21

Periodical: Zhur. fiz. khim. 29/10, 1854-1965, Oct 1955

Abstract: intensively adsorbed. The thermal effect of the catalytic dehydration of ethyl alcohol into diethyl ether, the apparent activation energy of straight reaction as well as the apparent energy of activation of the reverse reaction were established. Seven USSR references (1948-1955).

USSR/Chemistry . Catalytic dehydration

Card 1/1 Pub. 147 - 15/22

Authors : Topchiyeva, K. V., and Yun-Pin, K.

Title Mechanism of catalytic dehydration of ethyl alcohol and diethyl ether

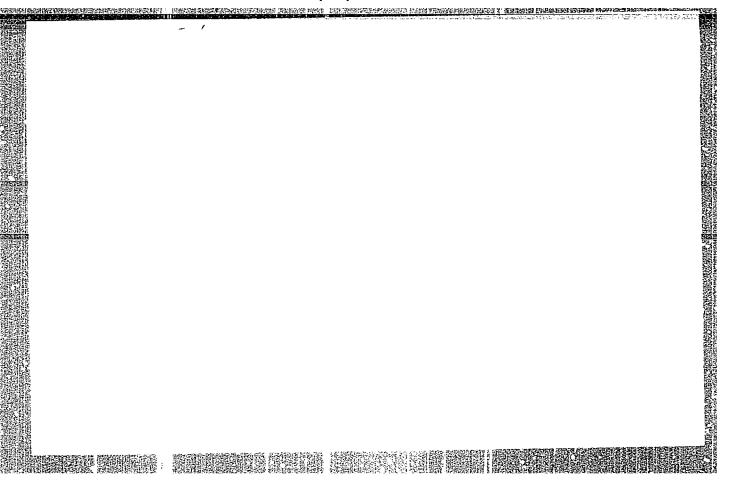
Periodical : Zhur. fiz. khim. 29/11, 2076-2080, Nov 1955

Abstract 8 Numerous investigations showed that the dehydration of all alcohols (aliphatic, cyclic, aromatic, fatty-aromatic and polyatomic) complies with one general mechanism. It was found that the formation of ethers can take place during catalytic dehydration of all alcohols and appears to be an integral part of the dehydration stage. The rate of alcohol dehydration depends, to a large extent, upon the structure of the alcohol. A new scheme for the mechanism of catalytic dehydration of ethyl alcohol and diethyl ether over aluminum oxide and aluminosilicate catalysts is introduced. Thenty-two references: 21 Russ. and USSR and 1 USA (1899-1955). Tables; graph.

Institution : Moscow State University im. M. V. Lomonosov

Submitted: April 12, 1955

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"



TOPCHILLYM, KV

USSR/Chemistry - Physical chemistry

Oard 1/2 Pub. 22 - 29/51

Authors Topchieva, K. V., and Yun-Pin, K.

Title (About the nature of active centers in dehydration reactions of ethyl alcohol over aluminum silicate catalysts

Periodical | Dok. AN SSSR 101/2, 305-308, Mar 11, 1955

Abstract: In study of the dehydration kinetics of ethyl alcohol over aluminum silicate catalysts, basic facts were discovered which are highly important for the solution of the problem concerning the nature of the active centers in dehydration reactions. Experiments showed that Al₂O₃ which is normally included in the composition of Al₂(SiO₃)₃ catalysts is the basic dehydration center.

Institution: The M. V. Lomonosov State University, Moscow

Presented by: Academician P. A. Rebinder, October 6, 1954

Periodical: Dok. AN SSSR 101/2, 305-308, Mar 11, 1955

Card 2/2 Pub. 22 - 29/51

Abstract : It

: It was established that the hydrogen ion of aluminum silicate structure which participates in hydrocarbon reactions produces no catalytic effect on the dehydration reaction which follows along the very same centers as for pure Al₂O₃ and aluminum silicate. It was found that Al-hydroxyl groups connected with the final silica gel groups can also participate in the dehydration reaction. Nine USSR references (1948-1954). Table; graphs.

TOPCHIYEVA, K.V.

USSR/ Chemistry - Physical chemistry

Card 1/1

Pub. 22 - 32/49

Authors

Title

Topchieva, K. V., and Moskovskaya, I. F.

.

Acidity and catalytic properties of aluminosilicates

Periodical

Dok. AN SSSR 101/3, 517-520, Mar 21, 1955

Abstract

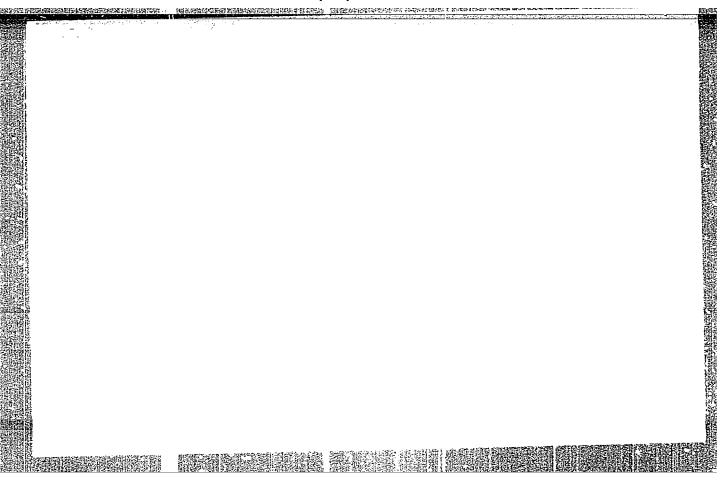
Experiments were conducted with synthetic samples consisting of 30% Al₂O₃ and 70% SiO₂ to determine the relation between the catalytic activity of aluminosilicates and their acidity. The catalytic activity was investigated by the cracking reaction of cumol (cumene). Results showed that the sample tested, which corresponds stoichiometrically to hydroaluminum silicates of the montmorillonite, displayed a maximum catalytic activity for cracking and hydrogen redistribution reactions in hydrocarbons. The acidity of the catalyst samples was studied by volumetric sodium adsorption from aqueous salt solutions and the results obtained are listed. Sixteen references: 15 USSR and 1 English (1945-1955). Tables; graphs.

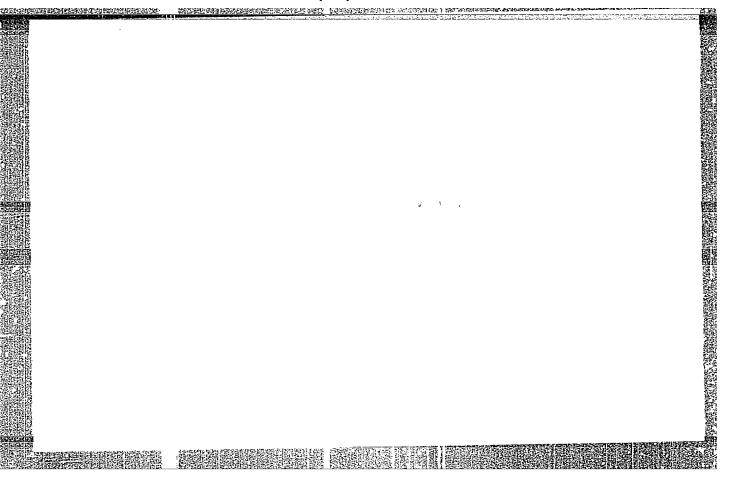
Institution :

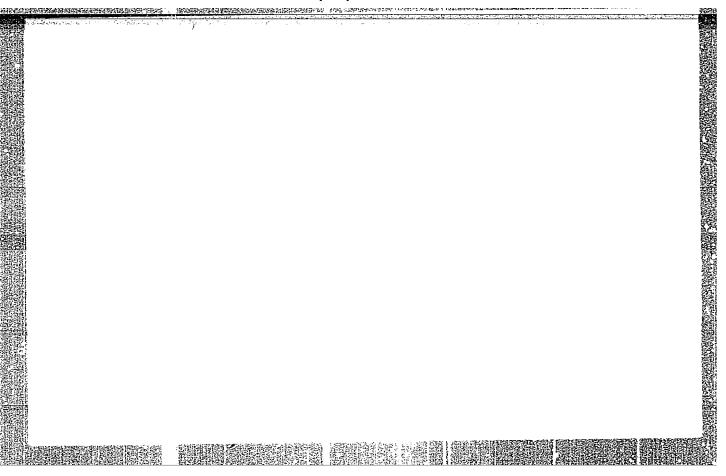
The M. V. Lomonosov State University, Moscow

Presented by :

Academician P. A. Rebinder, October 6, 1954







TOPCHIYEVA, K. V. and SMIRNOVA, I. V.

"Rol! poverkhnostnikh soyedineniy pri izuchenii kagaligicheskoy degidratatsii spirtov nad okis'yu alyuminiya i alyumosilikatnymi katalizagopami," paper presented at the International Congress on Catalysis, Philadelphia, Pa., 10-14 Sep 1956.

Original in Branch #5 - \$-3068659

VOL'PKOVICH, S.I., akademik; TOPCHIYEVA, K.V., prof., otv.red.

[Leboratory work in chemical engineering; program for the Cemistry Faculty] Programma praktikuma po khimicheskoi tekhnologii (dlis khimicheskogo fakul'teta), 1956. 3 p. (HIRA 11:3)

1. Moscow. Universitet. (Chemical engineering--Study and teaching)

FROST, Andrey Vladimirovich, professor; DOLGOPOLOV, N.N., sostavitel'
TOPCHIYEVA, K.V., doktor khimicheskikh nauk, otvetstvennyy redaktor;
GERASIMOV, Ya.I., redaktor; KOROBOV, V.V., kandidat khimicheskikh
nauk, redaktor; SMIRNOVA, I.V., kandidat khimicheskikh nauk, redaktor;
TETEVSKIY, V.M., doktor khimicheskikh nauk, redaktor; TILICHEYEV, M.D.
doktor tekhnicheskikh nauk, redaktor; SHCHEKIN, V.V., redaktor izdatel'stva; ZELENKOVA, Ye.V., tekhnicheskiy redaktor

[Papers on kinetics and catalysis] Trudy po kinetike i katalizu.

Moskva. Izd-vo Akademii nauk SSSR, 1956. 538 p. (MLRA 9:7)

1. Chlen-korrespondent AN SSSR (for Gerasimov)
(Catalysis) (Hydrocarbons) (Chemical reaction)

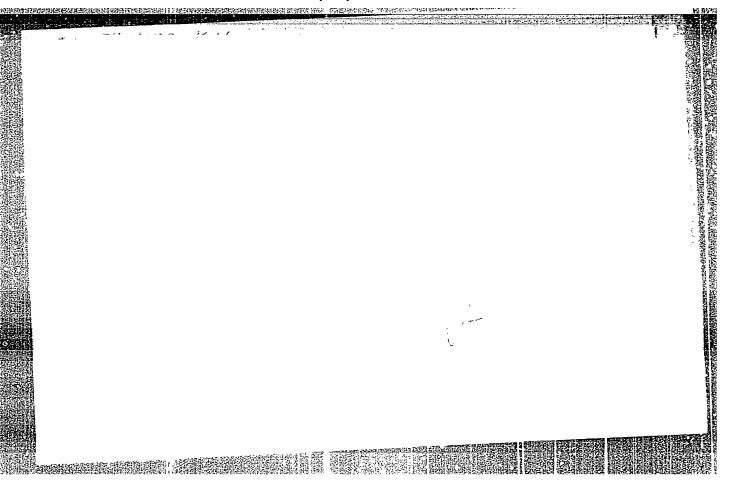
TOPCHIYEVA. K. V.P. PESHKOVA, V.M.; SHAKHOVA, Z.F.; ALIMARIN, I.P.; NOVOSELOVA, A.V.; SPITSYN, V.I.; LUTSENKO, 1.F.; GERASIMOV, Ya.I.; NESMSYANOV, A.N.; TERRENT'YEV, A.P.; POTAPOV, V.M.; GIBALO, I.M.

R.S. Przheval'skii; ohituary. Vest. Mosk. un. Ser. mat. mekh., astron., (MIRA 10:12)
fiz., khim. 11 no.2:205-207 '56. (MIRA 10:12)
(Przheval'skii, Evgenii Stepanovich, 1879-1956)

THE TRANSPORTER OF THE PROPERTY OF THE SHOPE OF THE PROPERTY O

Catalytic activity and structural characteristics of magnesium aluminum silicate catalysts. [with English summary in insert]. Zhur.fiz.khim. 30 no.9:2011-2015 S '56. (MLRA 9:12)

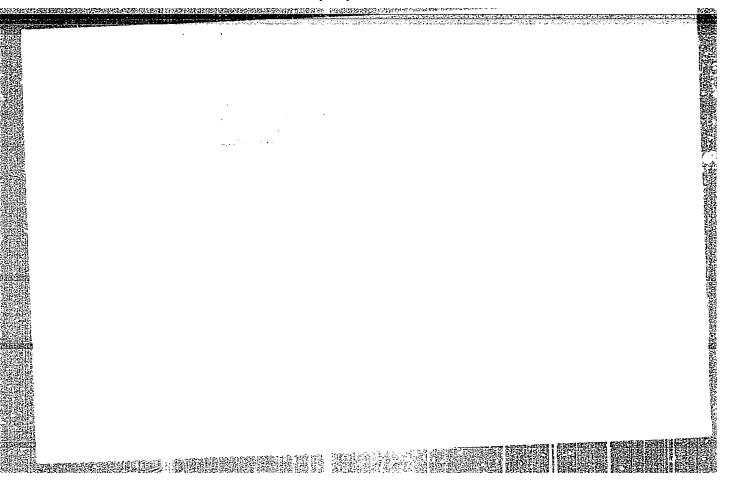
1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova, Akademiya nauk Azerbaydzhanskoy SSR, Institut khimii, Baku. (Catalysts, Aluminum silicate)



TOP/CHIYEVA, K.V., professor.

International Congress on Catalysis. Khim. nauka i prom. 2 no.2:250-(NIRA 10:6)
253 '57.

(Philadelphia--Catalysis--Congresses)



TOPCHIYEVA, K.V

-20-6-25/47

STATE RECOGNISHED THE STATE OF THE STATE OF

AUTHORS:

Topchiyeva, K. V., Rambayeva, A. M., and Opitts, G.

TITLE:

Hydrochlorination of Acetylene on Aluminum Oxide in the Flux (Gidrokhlorirovaniye atsetilena na okisi alyuminiya v potoke)

PERIODICAL:

Doklady AN SSSR, 1957, Vol. 117, Nr 6, pp. 1010 - 1012 (USSR)

ABSTRACT:

The authors shortly describe the use of acetylene in the production of plastics and the two methods of the production of vinylchloride employed in the USA and in Germany (references 1 - 5). The first method, the dehydrochlorination of dichlorethane by an alkaline solution in alcohol is the most economical one. But the great shortcomings of the work with mercury catalysts call for economical mercury-free catalysts. The present report describes the results of a laboratory-investigation of the method described in the title. Vinylchloride was produced from acetylene and hydrogen chloride over aluminum oxide by the flowing-through method at 250-350°C. The addition reaction of these substances was studied in dependence of 1.) a previous treatment of the catalyst with hydrogen chloride, 2.) the dosage of HCl in the initial gas mixture and 3.) the temperature. It was kept in mind that acetylene simultaneously partly decomposes into carbon and hydrogen, while carbon is deposited on the catalyst. Hydrogen was found in the gas mixture in consider-

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

20-6-25/47

Hydrochlorination of Acetylene on Aluminum Oxide in the Flux

ably smaller quantities than was calculated from the carbon deposits. Therefore the yield of vinylchloride was determined from a 2-component system: acetylene-vinylchloride. The yield of vinylchloride is mainly dependent on a previous treatment of the catalyst with HCl and on the condition of this treatment (table 1). The tests were made at 300°C. By the HCl-treatment of the catalyst for 3 hours the yield of vinylchloride was increased up to 59 %. Table 2 shows the influence of the dosage of HCl in the initial gas mixture. At a small HCl-excess (5,5 %) over the stoichiometrical relation the yield of vinylchloride rapidly increases (59,1 %). Further increase in the quantity of HCl has no effect upon the yield. Just as ineffective remains the more and more increasing quantity of HCl at the catalyst due to an increase in the quantity of HCl in the initial mixture. As the hydrochlorination of acetylene is an exothermic reaction, the selection of the temperature--regime is very important. According to reference 6, 7 the equilibrium of this reaction at room temperature is displaced in the direction of the formation of vinylchloride. With an increase in temperature due to the formation of heat during the reaction the equilibrium is displaced to the left. But the equilibrium constant between 250 and 350°C is still high enough. It was in this range that the dependence of the formation of vinylchloride on the tem-

Card 2/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

20-6-25/47

Hydrochlorination of Acetylene on Aluminum Oxide in the Flux

perature was studied (figure 1, 1). The modifications of the carbon deposits at the catalyst were also studied in the same range. The yield of vinylchloride increases with increasing temperature. The highest yield (~ 70 %) lies between 300 and 320°C and decreases at 350°C. The activity of the catalyst at the given parameters remained constant, for 4 hours. There are 2 figures, 1 table, and 6 references, 4 of which are Slavic.

ASSOCIATION:

Moscow State University imeni M. V. Lomonosov

(Moskovskiy gosudarstvernyy universitat im. M. V. Lomonosova)

PRESENTED: July 18, 1957, by S. I. Vol'fkovich, Academician

SUBMITTED: July 18, 1957

AVAILABLE: Library of Congress

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

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SOV/55-58-6-20/31 Topchiyeva, K. V., Stepanova, G. N., Akshinskaya, N. V. 5 (4) AUTHORS: Vapor Phase Etherification of Some Fatty Acids and Aromatic Acids on Oxide Contacts (Parofaznaya eterifikatsiya nekotorykh TITLE: zhirnykh i aromaticheskikh kislot na okisnykh kontaktakh) Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1958, Nr 6, PERIODICAL: pp 157-163 (USSR) In earlier papers the authors had succeeded (Refs 1-6, 9, 11) in finding out some interesting facts concerning the nature of ABSTRACT: the active centers of the alumosilicate catalysts used. It was found that these catalysts have two kinds of active centers: acid and oxide centers. The former are catalysts for the polymerization, alkylation, redistribution of hydrogen etc, and the latter for the dehydration of alcohols and the splitting of esters. For the reactions of the second type the following scheme was set up (Topchiyeva and Yun-Pin Refs 7, 8, 10, 12-15): $c_2H_5OH + OH - AI \langle \xrightarrow{K_1} \rangle$

CIA-RDP86-00513R001756310010-7" APPROVED FOR RELEASE: 08/31/2001

Card 1/4

Vapor Phase Etherification of Some Fatty Acids and SOV/55-58-6-20/31 Aromatic Acids on Oxide Contacts

$$\xrightarrow{K_1} \xrightarrow{\lambda_1} - oc_2H_5 \xrightarrow{K_2} c_2H_5oc_2H_5 + \lambda 1 - oH$$

$$\downarrow^{K_3} c_2H_4 + \lambda 1 - oH$$

The present investigation is a continuation of this work. It clears up the general rules of heterogeneous catalytic reactions of the etherification of the acids mentioned in the title by means of simple ethers and alcohols. The following systems were investigated: 1) Formic acid - diethyl ether.

2) n-fatty acid - diethyl ether, 3) acetic acid - diethyl and di-n-butyl ether, 4) the anhydride of cis-\$\Lambda^4\$-tetrahydro-phthalic acid - methyl alcohol, 5) the anhydride of 3,6-endomethylene-tetrahydrophthalic acid - methyl alcohol. Industrial aluminum oxide and synthetic alumosilicate were used as catalysts. The constants of initial materials are given in a table. Investigations were carried out on a circulation device. For the dissolution of the substances of systems 4 and 5 in methyl alcohol it was necessary to add some drops of sulphuric acid. The analysis of the catalyzed products

Card 2/4

Vapor Phase Etherification of Some Fatty Acids and SOV/55-58-6-20/31 Aromatic Acids on Oxide Contacts

was carried out according to the oxidation method (Ref 16) and by basic saponification (the latter for the determination of formic- and n-fatty acid). The condensate obtained from the aromatic acids was analyzed according to the method of reference 18. The dependence of the yield of esters on the temperature on Al₂O₃ is shown by figures 2 and 3. This yield passes through a maximum with an increase of temperature. Also the ester yield passes through a maximum with an increase of contact time. These investigations were carried out on various catalysts (pure Al₂O₃ and alumosilicate). The kinetic curves are analogous for fatty acids and the acids of the aromatic series, which indicates the equality of the etherification mechanism for the two acids on the catalysts used. The alumosilicate catalysts were found to be much more active than pure Al₂O₃. By the method of partly poisoning the catalysts (Fig 7) it was possible to prove the participation of two active centers in the etherification reaction. There are 7 figures, 1 table, and 19 references, 18 of which are Soviet.

Card 3/4

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

Vapor Phase Etherification of Some Fatty Acids and SOV/55-58-6-20/31 Aromatic Acids on Oxide Contacts

ASSOCIATION:

Kafedra fizicheskoy khimii (Chair for Physical Chemistry)

SUBMITTED:

March 11, 1958

Card 4/4

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

"eain, Ye. E., E. Topohyeva. K. Pasarchers Fasher shkoly f. Fa	term of the seather o	Leine Leine	
Geration, It. It formain, It. E., Eiseler, 307/59-56-5-30/31 T. E. Skumen, S. E., Topohyera, K. Y., Charles and Malantion of Statements Schools, Savie propolarated and Researchers K. T., Charles and Researchers of Higher Schools, Savies propolarated by yeahy shouly inauchyth radonalitory. H. I. Astronomia, finite, binist, 930, Mr 6, pp 23, -259 (1952) and education of qualified propolar the state in the class of charles and advanction of qualified propolarists in the first of charles in so way a guarante for thoroughly precipitating and charles of theoretical and specimental sort in the seasons of physics and physics of better in the seasons are falled of theoretical and speciments for the control of the charles of the physics and physics	As a first years' term for satisfacts of three years for andidates the practical work and the assistants of three years for andidates the practical work and the assistants of this formation will be carried out in accordance will be conducted accordant to the satisfact investigation will be carried out in accordance with the plans of the Chair be passed, if he satisfacts with the plans of the Chair was a maker of particular satisfact reports, and only passed the examination on the southing for sorter was and expense to the forther passed the examination the foreign languages. After haring employed this trial term and baried successfully passed the examination, he may become candidate letturer as its one assistant when the foreign languages. After haring of any other about 1 M well-controlled guitacre of the first -lass and of coloners. Besides this years all accordance to the first -lass and of coloners. Besides this years all successfully further and advance the statistic work of the satisfacts.	restgands tion will be a good trining both in the scientific sector and, in the gedagogies, field, and will therefore be the best way of forming first-class higher school instructors.	· · · · · · · · · · · · · · · · · · ·
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GERASIMOV, Ya.I.; YEREMIN, Ye.N.; KISELEV, A.V.; LEBEDEV, V.P.; SKURATOV, S.M.; TOPCHIYEVA, K.V.; SHARIPARONOV, M.I.

Methods of preparing scientific workers and teachers of institutions of higher education. Vest Mosk.un.Ser.mat., mekh., astron., fiz., khim. 13 no.1:235-238 '58. (MIRA 12:4) (Science-Study and teaching)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

SMIRNOVA, I.V.: TOPCHIYEVA, K.V.

Adsorption of individual hydrocarbons on commercial aluminum

oxide. Vest. Mosk. un. Ser. mat., mekh., astron., fiz., khim. 13 no.2:233-240 '58. (MIRA 12:2)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.
(Hydrocarbons) (Adsorption) (Aluminum oxides)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

TOPCHIYEVA, K.V.; STEPANOVA, G.N.; AKSHINSKAYA, N.V.

Vapor-phase esterification of some fatty and aromatic acids on oxygen catalysts. Vest. Mosk.un. Ser. mat., mekh., astron., fiz., khim. 13 no.6:157-163 '58. (MIRA 12:4)

1. Kafedra fizicheskoy khimii Moskov $_3$ kogo gosudarstvennogo universiteta.

(Acids, Organic) (Esterification)

AUTHORS: Topchiveva, K. V., Pletyushkina, A. I., 79-28-3-13/61

Zen'kovich, I. A.

TITLE: The Reaction of Allyl Benzene on Catalysts of Aluminum

Silicates (Prevrashcheniye allilbenzola na alyumosilikatnykh

katalizatorakh)

I. Investigation of the Reaction Kinetics (I. Izucheniye kinetiki prevrashcheniya)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 624-631

(USSR)

ABSTRACT: The present work continues earlier investigations on the

reaction mechanism of the isomerization of hydrocarbons in order to likewise check the assumption made before that

order to likewise check the assumption leading in this reaction there are two kinds of active centers acting in this reaction

mechanism. For this purpose the reaction kinetics of an aromatic hydrocarbon with unsaturated binding in the side chain - the allyl benzene - was investigated; this was done

in liquid and vapor phase on conditions excluding cracking. In this different catalysts from the aluminum silicate series

as well as pure aluminum oxide were used. This preferred

Card 1/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

The Reaction of Allyl Benzene on Catalysts of Aluminum 79-28-3-13/61 Silicates.

I. Investigation of the Reaction Kinetics

reaction enabled the authors to observe not only the rules of isomerization showing in it but also to trace the di- and polymerization processes of allyl benzene. In the contact of allyl benzene with the mentioned catalysts not only an isomerization takes place which consists of a re-grouping of the double bond in the side chain, but also a profound rearrangement of the initial product under the formation of a di- and polymer. The active centers of aluminum oxide and of the other catalysts only direct the isomerization connected with the re-grouping of the double bond in the side chain. The aluminum silicate centers catalize the reactions of isomerization, of the di- and polymerization, which was proved by experiments. The step-by-step reaction mechanism of allyl benzene on the mentioned catalysts was found. The difference in the reaction mechanism of allyl benzene under the influence of catalysts having different percentual quantities of aluminum oxide is mentioned. The applicability of the equation for monomolecular heterogenous catalytic reactions in the reaction flow is shown when the reaction

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Card 2/3

The Reaction of Allyl Benzene on Catalysts of Aluminum 79-28-3-13/61

I. Investigation of the Reaction Kinetics

products are absorbed more quickly than the initial compounds in the case of the isomerization of allyl benzene above aluminum oxide in the vapor phase.

There are 9 figures, 2 tables, and 17 references, 14 of

which are Soviet

ASSOCIATION:

Moskovskiy gosudarstvennyy universitet

(Moscow State University)

SUBMITTED:

January 28, 1957

Card 3/3

CIA-RDP86-00513R001756310010-7 "APPROVED FOR RELEASE: 08/31/2001

Topchiyeva, K. V., Pletyushkina, A. I., 79-28 3-14/61 AUTHORS:

The Reaction of Allyl Benzene on Catalysts of Aluminum TITLE:

Silicates (Prevrashcheniye allilbenzola na alyumosilikatnykh

katalizatorakh)

II. The Structure and the Mechanism of the Dimer Formation

(Stroyeniye i mekhanizm obrazovaniya dimera)

Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 631-634 PERIODICAL:

In this work the results of an investigation of the ABSTRACT:

reaction kinetics of allyl benzene in the liquid phase above aluminum oxide- and aluminum silicate catalysts of various composition are presented. The authors showed that at the contact of allyl benzene with aluminum oxide only one isomerization reaction takes place which proceeds parallel with a regrouping of the double bond in the side chain (Refs 1.2). Above aluminum silicates the reaction takes place much more complicatedly, the initial products consisting of a dimer and a polymer of propenylbenzene. At the same

time the abrupt difference between the course of the kinetic Card 1/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

The Reaction of Allyl Benzene on Catalysts of Aluminum 79-28-3-14/61 Silicates
II. The Structure and the Mechanism of the Dimer Formation

curves above catalysts consisting of 16 % Al203 and 84 % SiO_2 as well as of 30 % $\mathrm{Al}_2\mathrm{O}_3$ and 70 % SiO_2 and the course of the kinetic curve above catalysts having a greater percentage of aluminum oxide: 50 % Al203 and 50 % SiO2, 80 % Al2O3 and 20 % SiO2 was noticed. This great difference in the action of the catalysts in the mentioned reactions is based on a change of concentration of the active centers as well as on the different rôle they play in isomerization-, dimerization- and polymerization reactions. In the present work proofs are mentioned for the structure and the mechanism of the formation of the dimers of allyl benzene. In the contact of the allyl benzene with aluminum silicate catalysts one dimer, the 2,5diphenylhexens-2, was isolated and characterized. The scheme of the synthesis of the 2,5-diphenylhexene-2 above the catalyst by formation of a carbonium ion is shown.

Card 2/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

The Reaction of Allyl Benzene on Catalysts of Aluminum 79 -28 3-14/61
Silicates
II. The Structure and the Mechanism of the Dimer Formation
There are 10 references, 5 of which are Soviet
ASSOCIATION: Moskovskiy gosudarstvennyy universitet
(Moscow State University)

SUBMITTED: January 28, 1957

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

TOPCHIYEUA, K.V.

AUTHORS:

76-1-6/32 Smirnova, I. V., Topchiyeva, K. V., Mil'hova,

STATES THE DESCRIPTION OF THE PROPERTY OF THE

L. P.

TITLE:

The Adsorption of Alkylaromatic Hydrocarbons From Solutions by Means of Industrial Catalysts. I. (Adsorbtsiya iz rastvorov alkilaromaticheskikh

uglevodorodov na promyshlennykh katalizatorakh. I.)

PERIODICAL:

Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 1, pp. 43-48

(USSR)

ABSTRACT:

The question of the problem of the influence of the conjugated double compound in the side chain of an aromatic ring or the adsorption from a solution is treated by means of the example of isopropylbenzene and isopropenylbenzene adsorbed by industrial catalysts. The systems investigated here are infinitely intermixing liquids. The adsorption of isopropylbenzene from solutions in n-heptane and in carbon tetrachloride, the adsorption of isopropenylbenzene from solutions in n-heptane by means of industrial catalysts of Houdry and aluminum oxide at 20°C was investigated. The adsorption isothermal lines pass through a maximum and cross the concentration axis in a point near to $c_{\rm S}=1/V_{\rm m}$.

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CIA-RDP86-00513R001756310010-7" APPROVED FOR RELEASE: 08/31/2001

The Adsorption of Alkylaromatic Hydrocarbons From Solutions by Means of Industrial Catalysts. I.

76-1-6/32

with the property of the prope

 $V_{\rm m}$ = the molecular volume of carbon, $c_{\rm B}$ = the concentration. Up to the concentrations corresponding to the maximum the adsorption remains monomolecular. The authors show that the selective adsorption of isopropylbenzene is essentially greater from a compound with n-heptane than with a compound with carbon tetrachloride. The authors stated that the molecules of the alkylaromatic hydrocarbons investigated here are, with the benzene ring level, orientated parallel to the catalyst surface in the case of an adsorption from solutions in n-heptane. The authors also show that the presence of a conjugated double compound in the side chain of the aromatic ring at the transition from isopropylbenzene to isopropenyl-benzene essentially increases the adsorption potential. This proves the change of the molecular constant from 60 Å to 56 Å in the case of isoprenylbenzene. There are 4 figures, 3 tables, and 28 references, 19 of which are Slavic.

ASSOCIATION:

Moscow State University imeni M. V. Lomonosova (Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova).

Card 2/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

The Adsorption of Alkylarometic Hydrocarbons From Solutions by Means of Industrial Catalysts. I.

76-1-6/32

SUBMITTED:

August 3, 1956

AVAILABLE:

Library of Congress

Card 3/3

5(4) AUTHORS: Smirnova, I. V., Topchiyeva, K. V. SOV/20-123-2-30/50

TITLE:

The Adsorption of Hydrocarbons at Increased Temperatures (Adsorbtsiya uglevodorodov pri povyshennykh temperaturakh)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 2, pp 316-319

(USSR)

ABSTRACT:

The present paper contains data concerning adsorption from solutions of isopropyl benzene, isopropenyl benzene, propenyl benzene, allyl benzene, and cyclohexene on aluminum oxide, which, as is known, catalyzes many important processes as e.g. the isomerization of hydrocarbons. Short reference is made to 4 earlier papers dealing with this subject. The authors compare the adsorption of the aforementioned hydrocarbons with that of n-propyl-benzene and also with the adsorption of benzene. The investigation of this carbon series makes it possible to solve also the problem of the influence exercised by a conjugate double bond in the side chain of an aromatic ring. Also the relative adsorbability of hydrocarbons in an unsaturated bond in various positions is investigated (allyl benzene - propenyl benzene). Adsorption from the solutions was measured interferometrically, in which case normal heptane

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The Adsorption of Hydrocarbons at Increased

SOV/20-123-2-30/50

Temperatures

served as a solvent. The adsorbent used was normal technical aluminum oxide. Adsorption measurements were carried out at 20, 30, and 40°, the isothermal lines of the adsorption of the investigated hydrocarbons at 20 and 40° are shown by 2 diagrams. The presence of a configate double bond in the side chain of an alkyl-aromatic molecule does not vary its planeparallel orientation in the mono-layer in the case of adsorption on the catalyzer surface. With an increase of temperature, the part of the surface that corresponds to each adsorbed molecule increases, but the thickness of the adsorption layer decreases somewhat. According to the data obtained by adsorption measurements carried out at 20°, propenyl benzene, isopropenyl benzene, and allyl benzene (which contain a double bond in the side chain) are better adsorbed than aromatic molecules with a saturated alkyl radical with the same number of carbon atoms. According to the results obtained at 40°, adsorption becomes weaker in the two investigated hydrocarbons if temperature rises. The molecules of cyclohexene are at first adsorbed planely on the surface of the aluminum oxide but they stand up with increasing concentration. Thus,

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The Adsorption of Hydrocarbons at Increased

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Temperatures

the existence of a double bond in the molecule of a cyclic hydrocarbon adsorbed on a catalyzer gives rise to certain particularities in the adsorption process. There are 3 figures,

1 table, and 13 references, 11 of which are Soviet.

ASSOCIATION:

Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Chair for Physical Chemis-

try at Moscow State University imeni M. V. Lomonosov)

PRESENTED:

July 2, 1958, by P. A. Rebinder, Academician

SUBMITTED:

June 18, 1958

Card 3/3

CIA-RDP86-00513R001756310010-7" APPROVED FOR RELEASE: 08/31/2001

sov/20-123-5-34/50

5(4) AUTHORS: Topchiyeva. K. Y., Moskovskaya, I. F.

TITLE:

On the Nature of the Acidity of Alumo-Silicate Cracking Catalysts (O prirode kislotnosti alyumosilikatnykh kata-

lizatorov krekinga)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 5, pp 891-894

(USSR)

ABSTRACT:

According to previous papers (Refs 1-10), the method of the exchange absorption of salt solutions permits a selective extraction of the active centers of the alumo-silicate complex, practically without the exchange centers of the oxides plex, practically without the exchange centers of the oxides being affected. In connection with the kinetic method, the kinetic activity of the samples can be accurately determined by measuring the extraction of acid centers. The present paper proves that the combined application of these two methods with the method of titration of proton-free places is useful for the separate investigation of any type of acid and for the explanation of their role in the reaction of cracking. The investigations were carried out on Al-Si catalysts (this an investigation for alumo-silicate catalysts) of increasis an investigation for alumo-silicate catalysts) of increasing Al₂0₃ content (10/90, 30/70, 50/50, 80/20) and on pure

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SOV/20-123-5-34/50

On the Nature of the Acidity of Alumo-Silicate Crecking Catalysts

oxides of aluminum and silicon. The experimental kinetic data were dealt with according to the equation of A. V. Frost (Ref 14) for monomolecular heterogeneous reactions. A diagram shows the dependence of the constant of velocity on the quantity of the introduced cations of Li and Na. The activity of any investigated sample decreases linearly if new quantities of cations are introduced. This decrease is limited by a break (izlom) and then the activity varies very slowly in spite of the introduction of considerable quantities of cations. According to the authors' opinion, the above-mentioned break of the straight line can be explained by a continued exchange of the catalytically low-active oxides Λl_2^{03} and $Si0_2$ with OH-groups or by impeding the diffusion by increasing the concentration of the metal cations on the surface of the catalyst. The sample of the composition 30/70 had the maximum proton acidity and the maximum activity. These quantities were somewhat lower for the sample 50/50 and still lower for the samples 80/20 and 10/90. The ion exchange carried out with the original oxides is not intense and reduces the constant of the rate of cumene cracking practically to zero. The high exchange power

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The subtraction of the subtracti

SOV/20-123-5-34/50 On the Nature of the Acidity of Alumo-Silicate Creeking Catalysts

and cracking activity is due to the Al-Si complex and not to the oxides contained in it. The inclination of the above-mentioned straight lines were different for samples corroded by Li cations and Na cations. This difference is apparently due to the shielding influence of the Na ions. The dependence of the constants of velocity of non-corroded alumo-silicate catalysts and of aluminum oxide on aproton acidity is linear and also the above-mentioned correspondence between activity and acidity remains valid. The authors' experiments proved also the acidity of aluminum oxide. The activity depends linearly on proton acidity. These data prove that the introduction of lithium cations into the catalyst diminishes its cracking activity. There are 4 figures and 16 references, 6 of which are Soviet.

ASSOCIATION: Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova

(Chair of Physical Chemistry of Moscow State University

imeni M. V. Lomonosov)

Card 3/4

5(3) AUTHORS: Smirnova, I.V. and Topchiyeva, K.V. SOV/55-58-2-32/35

TITLE:

Adsorption of Individual Hydrocarbons on Industrial Aluminum Oxide (Adsorbtsiya individual'nykh uglevodorodov na pro-

myshlennoy okisi alyuminiya)

PERIODICAL:

Vestnik Moskovskogo Universiteta Seriya matematiki, mekkaniki, astronomii, fiziki, khimii, 1958, Nr 2, pp 233-240 (USSR)

ABSTRACT:

A report on the contents of the present paper was given in December 1957 at the Leningrad conference on the production, structure and properties of sorbents. There was investigated the adsorption of the n-propylbenzene and of the allylbenzene under 20° and 40° and of the benzene, isopropylbenzene, isopropenylbenzene and propenylbenzon under 20° from solutions in n-heptane by industrial aluminum oxide. The isothermal lines of the adsorption show a normal course for consolute liquids. The adsorption remains monomolecular up to the concentration which corresponds to the maximum. The molecules of the considered hydrocarbons are in parallel with the catalyzer surface under adsorption with the plane of the benzene ring. The adsorption decreases with increasing temperature.

Card 1/2

Adsorption of Individual Hydrobarbons on Industrial Aluminum Oxide

SOV/55-58-2-32/35

The maximum of adsorption displaces into the direction of smaller concentrations which causes an increase of the adsorption potential. The adsorption layers are less dense for

40° than for 20°.

There are 5 figures, 1 table, and 16 references, 14 of which

are Soviet, 1 is German, and 1 Indian.

ASSOCIATION:

Kafedra fizicheskoy khimii (Chair of Physical Chemistry)

SUBMITTED:

January 30,1958

Card 2/2

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TCPCHIYEVA, K. V., KALIKC, M. A., PIGUZOVA, L. I., AGAFONOV, A. V., PANCHENKOV, G. M., KAMAKIN, N. M., MIRSKIY, Y. S.

"Studying the Nture of Activity of Alumosilicate Catalysts."

Report submitted at the Fifth World Petroleum Congress, 30 May - 5 June 1959. New York.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001756310010-7"

5.3200

68051 50V/55-59-3-19/32

AUTHORS:

Topchiyeva, K. V., Planovskaya, I. P., Lushnikov, V. V.

TITLE:

Investigation of the Kinetics of the Cracking Reaction of

Cumene on a Pseudoliquid Aluminosilicate Catalyst

PERIODICAL:

Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki,

astronomii, fiziki, khimii, 1959, Nr 3, pp 151 - 157 (USSR)

ABSTRACT:

It was the object of this paper to compare the kinetics of cumene cracking on a suspended fine-grained aluminosilicate catalyst with the kinetics of this reaction on a solid catalyst. An aluminosilicate was used, the spherical particles of which had a diameter of 0.1 = 0.2 mm (Fig 1). Figure 2 shows the apparatus used for experiments with a suspended (pseudoliquid) catalyst. The experiments were carried out at 425° . The cumene was conveyed through by means of dry nitrogen heated to 160° . The passage velocity and concentration were kept constant: Passage of nitrogen: 0.20 ± 0.004 l/min, passage of cumene: 20.00 ± 0.05 ml/min. Cracking on the solid aluminosilicate catalyst occurred in the usual apparatus. The degree of cumene transformation was determined from the ratio of the molar fraction of the benzene formed to the sum of the molar fraction of

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Investigation of the Kinetics of the Cracking Reaction SOV/55-59-3-19/32 of Cumene on a Pseudoliquid Aluminosilicate Catalyst

benzene plus the molar fraction of cumene which did not enter into reaction. The change of the volume rate (referred to the unit of volume of the catalyst) was effected by changing the quantity of the catalyst introduced into the apparatus with a constant rate of flow of the cumene. Experimental results are given in table 1. The contact time was calculated from the ratio v/v_h ($v = volume of the reaction zone in <math>m^3$, $v_h = rate$ of flow in m3/h). Figure 3 shows the dependence of the degree of transformation on the contact time in a suspended and in a fixed catalyst. With a suspended catalyst the reaction develops much more rapidly. The kinetic data were further evaluated on the basis of the equation holding for the ideal mixture of the added substance with the reaction products (Table 2, Fig 4). It was found that under the given conditions, the process developed while the gaseous phase was completely mixed. Calculation of the reaction under the conditions of ideal shifting (i.e., under conditions at which the reaction products are shifted by the added substance without being mixed) shows (Table 3, Fig 3) that in this case higher degrees of transforma-

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A STAND SECTION OF THE PROPERTY OF THE PROPERT

Investigation of the Kinetics of the Cracking Reaction SOV/55-59-3-19/32 of Cumene on a Pseudoliquid Aluminosilicate Catalyst

tion may be attained, which leads to the conclusion that it is possible to intensify the cracking process even more. There are 4 figures, 3 tables, and 6 references, 4 of which are Soviet.

ASSOCIATION: Kafedra fizicheskoy khimii (Chair of Physical Chemistry)

SUBMITTED: December 2, 1958

Card 3/3

69791

s/055/59/000/06/20/027 B004/B002

5.3300 AUTHORS:

Topchiyeva, K. V., Zenikovich, I. A., Treshchova, Ye. G.

TITLE:

The Influence of Hydrogen on Thermal and Catalytic Cracking

of n-Octane (

PERIODICAL:

Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki,

astronomii, fiziki, khimii, 1959, No. 6, pp. 164 - 170

TEXT: For their investigation, the authors partly used a synthetic aluminosilicate (30% ${\rm Al}_2{\rm O}_3$ + 70% ${\rm SiO}_2$) and partly a commercial aluminosilicate

catalyst. The range of the experimental temperature was $450 - 550^{\circ}$. The mixture obtained from hydrogen and cracking products was analyzed, its density was determined, and Raman spectra were taken from the liquid products. Preliminary experiments showed that besides catalytic cracking, also thermal cracking took place (Fig. 1). Therefore, the total yield of cracking and the yield of thermal cracking were determined and from the difference, also the yield of catalytic cracking. The yield of thermal cracking decreases with an increasing flow rate of octane, while that of catalytic cracking remains unchanged, namely 8%. The yield of thermal cracking was above all dependent on the experimental apparatus

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